DOCUMENT RESUME

ED 209 647 CS 006 358

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TITLE Children's Ability to Comprehend Main Ideas after Reading Social Studies Textbooks.
PUB DATE Dec 81
NOTE 15p.; Paper presented at the Annual Meeting of the American Reading Forum (2nd, Sarasota, FL, December 10-12, 1981).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Cognitive Processes; *Content Area Reading; Elementary Education; Grade 3; Grade 6; *Reading Comprehension; *Reading Research; *Reading Skills; *Textbook Content

ABSTRACT

The ability to comprehend the gist and the main ideas of a passage are important textbook reading skills. Since research into children's ability to extract the central thoughts from prose has produced mixed findings, a study was undertaken to determine how skillful children are at comprehending the gist and the main ideas of a passage. To insure that the findings could be generalized to actual classroom reading behavior, the study was conducted in a naturalistic setting--83 third grade and 89 sixth grade students in their own classrooms read unaltered expository prose from existing textbooks. Main idea comprehension was assessed through a series of traditional reading comprehension measures. The results indicated that the students tended not to comprehend either the gist of an entire passage or its main ideas. The findings suggest that educators should continue to teach students how to comprehend main ideas, especially in content area reading materials. (FL)

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Children's Ability to Comprehend Main Ideas After Reading Social Studies Textbooks

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Paper Presented at the Second Annual Meeting
of the American Reading Forum
Sarasota, Florida, December 1981

CS006358

Children's Ability to Comprehend Main Ideas after Reading Social Studies Textbooks

Content textbooks contain vast amounts of information, all of which conceivably cannot be remembered. It is important, therefore, for readers to be able to identify central themes in texts. This enables a reader to reduce, organize, and synthesize the information in a passage so that the significant ideas can be remembered, retained, and learned. Thus, an important textbook reading skill involves the ability to extract the central thoughts from a text; that is, to comprehend the gist or main ideas of a passage.

Research investigating skilled readers' ability to comprehend central thoughts in expository (textbook) prose has suggested that fluent readers retain main idea, gist information better than less central, detailed ideas (e.g., Duchastel, 1979; Kintsch & Keenan, 1973; Kintsch, Kozminsky, Streby, McKoon, & Keenan, 1973; Meyer, 1975; Meyer & McConkie, 1973). Research on children's ability to comprehend main ideas after reading prose, however, is mixed. Several studies (Brown & Smiley, 1977; Christie & Schumacher, 1975; Waters, 1978) have indicated that children are able to comprehend central thoughts after listening to narrative passages, but when young students are required to read expository texts, they have consistently been unable to demonstrate skill at main idea comprehension (Baumann, 1981; Dunn, Matthews, & Bieger, 1979; Taylor, 1980; Tierney, Bridge, & Cera, 1978-79).

A careful review of this research with children, however, revealed that the external validity (or ecological validity, Bronfenbrenner, 1976) of these studies is severely limited. This is especially true if the environment to which generalizations are to be made is children's reading comprehension behavior in the elementary classroom. It was the purpose of this study to evaluate children's ability to comprehend main ideas after reading expository discourse in a manner

that justified generalizing the findings to children's classroom reading behavior. To accomplish this, groups of third and sixth grade students within their own classrooms read unaltered, natural expository passages that were randomly selected from existing curricular materials (social studies textbooks). Main idea comprehension was then assessed by administering a series of traditional reading comprehension measures: paper and pencil, question/answer tasks.

A secondary purpose of the study was to develop and validate a straightforward and intuitively simple system for identifying main ideas in expository prose. Existing prose analysis systems (e.g., Johnson, 1970; Kintsch, 1974; Meyer, 1975) are unnecessarily complex for educational research and were not specifically designed to identify main ideas. Consequently, a new procedure--designed solely for the purpose of identifying main ideas--was developed and employed in this study.

Method

Subjects

Classes of heterogeneously grouped third and sixth grade students from two schools in a suburban Dallas, Texas, school district participated in the study. This sample consisted of 83 third graders and 89 sixth graders.

Materials

Three experimental passages at each grade level were randomly selected from pools of potential texts which were taken directly from third and sixth grade social studies textbooks. (See Baumann, 1981, for a description of this text selection procedure.) Each text was an unaltered, passage length (250-400 words) selection for which readability was appropriate for third and sixth graders.

Identification of Main Ideas

Based upon Johnson's (1970) concept of pausal units, each text was segmented into linguistic subunits, which essentially involved dividing each text into independent and dependent clauses. Undergraduate education majors then read

each passage and composed a single statement that contained the main theme of the passage (i.e., a gist statement). With paraphrase gist statements being clustered together, one statement represented the majority of responses for each passage which was designated the gist statement for that text. The students also examined the texts and identified those text portions (phrases, clauses, sentences) they believed to contain the main ideas of the passage. A 50 percent criterion was used to designate main ideas. Thus, sections of the texts identified as main ideas by 50 percent or more of the students were formally labeled main ideas; text portions not labeled main ideas were considered to represent details.

Procedure and Dependent Measures

The data were gathered in two sittings. The three passages were randomly assigned so that each student read two of the three texts--one at the first sitting, another at the second. The students were directed to silently read each passage twice and then respond to several dependent measures which probed students' comprehension of the gist of the passage and specific main ideas.

At the first test sitting the students produced a cued written recall. With the aid of an alphabetical listing of all content words from the passage (nouns, verbs, adjectives, adverbs), students were required to first "write a single sentence that tells what the whole story was about." After this, the students were told to "now write down as much as you can remember about the story you read."

At the second sitting, students were required to respond to three dependent measures after reading a second passage. The first task was a gist statement recognition test in which the subjects were presented with a list of seven statements, one of which was the gist statement, and then they were required to "select the one sentence that best tells what the whole story was about." To assess main idea versus detail comprehension, the students then responded to a multiple choice test which

contained 12, five-option items, six of which probed information about main ideas, and six which assessed detail comprehension. The final comprehension probe was a main idea/detail recognition test. This required the students to examine a list of 12 statements and determine whether they were main ideas, details, or false statements.

Scoring of the dependent measures proceeding in the following manner. Cued written recall gist statements that were identical or paraphrases of the actual gist statement received full credit; fragments of the gist statement received partial credit. Written recalls were scored by comparing the protocols to the list of linguistic subunits. Again, either full or partial credit was awarded. Since there were unequal numbers of main ideas and details, scores were converted to proportions for data analyses. The gist statement recognition test, the multiple choice test, and the main idea/detail recognition test were objectively scored: one point for a correct response, no credit for incorrect responses.

Results

The study addressed two basic research questions: (a) how skillful are children at comprehending the gist for an entire passage, and (b) are students more skillful at comprehending main ideas or details after reading? Results pertaining to each of these questions are thus presented separately.

Gist Comprehension

Table 1 presents raw and percentage scores for students' performance on the gist statement production (written cued recall) and recognition tasks. Inspection of these data reveals that students at either grade level were able to produce a statement that represented the gist for an entire passage only about one-third of the time. Students' ability to correctly identify the gist statement from a list of statements exceeded their gist statement production ability. In all cases, the majority of students were able to successfully complete this task.

Insert Table 1 about here

Main Idea Comprehension

Table 2 presents results for the three dependent variables used to assess main idea comprehension. A series of nondirectional *t* tests that compared mean performance for the comprehension of main ideas and details was conducted. Each test was evaluated at a .01 alpha level.

Generally, there is no consistent pattern of results either within or between the dependent measures. For the written cued recall measure (first section of Table 2), only two of the comparisons attained statistical significance--a difference favoring main idea comprehension for Passage B and details for Passage E. Only one of the main idea/detail comparisons for the multiple choice tests was significant: Third graders who read Passage C answered significantly more main idea questions correctly compared to detail questions (see middle section of Table 2). And for the main idea/detail recognition test, a statistically reliable tendency favoring the recognition of details was noted for third graders who read Passage C and for every sixth grade text (see last section of Table 2).

Insert Table 2 about here

Discussion

Viewed collectively, the results of the present study do little to further the notion that elementary students are inherently proficient at comprehending either the entire gist or significant main ideas after reading expository (textbook) prose. Although students were reasonably proficient at recognizing a gist statement (about 70% accuracy across all texts, see Table 1), only about one-third of the students were able to produce an accurate gist statement. These results obviously reinforce the finding that recognition comprehension surpasses recall comprehension (see Kintsch,

1970; McCormack, 1972). Unfortunately there is no comparable research which explores children's ability to recall or state the gist for an entire passage. Otto, Barrett, and Koenke (1968) found that 29 percent of second graders could compose an adequate main idea statement for short, simple paragraphs, while 64 percent of fifth graders were successful at this same task. Similarly, Danner (1976) reported that second, fourth, and sixth graders were highly successful at stating the theme for short, descriptive paragaphs. Thus, it appears that children are reasonably skillful at stating the major theme for small units of text. But for larger texts, children have difficulty producing a statement that integrates information across a series of paragraphs. When presented with a recognition task, however, most students can select or recognize a gist statement. In the way of an explanation, Baker and Stein (1981) hypothesize that "young children's sensitivity to main ideas is below their level of awareness" (p. 15). In other words, children may tacitly comprehend the central thought of a text and hence recognize a gist statement, but alternately they may be unable to produce or construct a statement that expresses the central thought.

Results of the tests that compared children's ability to comprehend the main ideas in the passages support previous research by Baumann (1981), Dunn et al. (1979), Taylor, (1980), and Tierney et al (1978-79) in which elementary students were unable to demonstrate superior comprehension of main ideas compared to details. Interestingly, all these studies involved expository prose, whereas several of the studies in which children demonstrated greater skill at main idea comprehension (Brown & Smiley, 1977; Christie & Schumacher, 1975) employed narrative texts. As Baumann (1981) argued, it may be that since children have much exposure to narratives in elementary school, they have considerable knowledge of them, and hence are sensitized to central story themes and readily comprehend main ideas in narratives. Conversely, since students get little exposure to expository prose prior to the upper

elementary grades, they have less knowledge of how expository prose is constructed, and hence have difficulty grasping central thoughts.

In addition to discourse type (narrative/expository), a second variable, encoding modality, may also explain why children sometimes appear to comprehend main ideas with skill and other times do not. In all the studies in which children demonstrated skill at main idea comprehension (Brown & Smiley, 1977; Christie & Schumacher, 1975; Danner, 1979; Meyer, 1977; Waters, 1978), the students listened to the texts. In the present study, as well as other experiments in which children were not highly skilled at main idea comprehension (Baumann, 1981; Dunn et al., 1979; Otto et al., 1968; Taylor, 1980; Tierney et al., 1978-79), the subjects silently read the experimental texts. Thus, it may be that listening to a passage promotes main idea comprehension, and reading does not.

Conclusions

Based upon the results of this study, two conclusions seem justified. First, elementary students who read expository (textbook) prose tend not to comprehend either the gist of an entire passage or its main ideas with great skill. This can be stated with a reasonable level of confidence because the level of ecological validity for this experiment was high. That is, the experimental environment was naturalistic: children in their classrooms reading passages taken directly from existing curricular materials responding to traditional measures of reading comprehension. Thus, it would be unwise for elementary or middle school content teachers to assume that their students will be inherently skillful at main idea comprehension.

Second, the main idea identification procedure developed for use in the present study proved to be both practical and useful. As evidenced by high inter-rater agreement scores (.92 or greater), the procedure was reliable. And given the intuitively simple and straightforward nature of the procedure, the face validity was also high. As a measure of concurrent validity, two of the texts in the present

study were previously analyzed according to Meyer's (1975) prose analysis system (cf., Baumann, 1981). Of the 13 main ideas identified by the university students, all but one appeared in the upper half of the Meyer content structure hierarchy. Thus, there was much consistency between the new procedure and an established prose analysis system.

In conclusion, in light of these findings, it would behoove educators to continue the practice of teaching students how to comprehend main ideas, especially in connection with content area reading materials. For researchers, efforts in two areas are appropriate. First, the concept of "main idea" needs to be more clearly defined, for as Pearson (1981) noted, "the term 'main idea' is but a main idea for a polyglot of tasks and relations among ideas" (p. 124). And second, researchers need to develop instructional strategies for teaching students how to comprehend the varieties of main ideas, and most importantly, assess the relative effectiveness of these teaching strategies.

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Table 1

Percentage of Students Correctly Producing and Recognizing Gist Statements

Passage	Written cued recall			Recognition		
	n[a]	Correct responses	Percent correct	n[a]	Correct responses	Percent correct
			Third grade			
A	27	8	33.3%	27	21	77.8%
B	28	9	32.1%	24	18	75.0%
C	28	7.5	26.8%	26	14	53.8%
			Sixth grade			
D	30	10.5	35.0%	29	22	75.9%
E	30	10.5	35.0%	28	19	67.9%
F	29	15	51.7%	28	20	71.4%

[a]Sample sizes differ between written cued recall and recognition because several students were absent at the second test sitting.

Table 2

Mean Scores for Third and Sixth Graders' Main Idea and Detail Comprehension as Measured by Three Different Tests

Grade and passage	Main ideas	Details	Mean difference	df	t
Written cued recall test[a]					
Third					
A	.159	.176	.017	26	0.65
B	.165	.083	.082	27	3.74*
C	.133	.144	.011	27	0.39
Sixth					
D	.442	.430	.012	29	0.38
E	.235	.367	.132	29	4.58*
F	.359	.328	.031	28	1.22
Multiple choice test[b]					
Third					
A	4.00	3.67	0.33	26	0.98
B	3.25	3.96	0.71	23	2.48
C	4.92	3.89	1.03	25	3.48*
Sixth					
D	4.86	5.28	0.42	28	2.08
E	4.32	4.64	0.32	27	1.51
F	5.64	5.32	0.32	27	1.59

Table 2 continued

Grade and passage	Main ideas	Details	Mean difference	df	t
		Main idea/detail recognition test[c]			
Third					
A	2.48	3.22	0.74	26	2.39
B	2.29	3.04	0.75	23	1.87
C	2.12	3.04	0.92	25	2.99*
Sixth					
D	2.24	3.69	1.45	28	3.98*
E	2.18	3.68	1.50	27	5.88*
F	2.21	3.71	1.50	27	5.47*

[a]Mean scores for the written cued recall test are proportions; hence, they can be interpreted as percentages (e.g., .159 = 15.9%).

[b]Mean scores for the multiple choice test are raw scores, and there were six main idea and six detail questions.

[c]Mean scores for the recognition test are raw scores, and there were five main idea and five detail items.

*$p < .01$